

IN THE CLAIMS:

Claims 1-19 (Canceled)

Claim 20 (Original) A light modulation apparatus comprising:
a liquid crystal device; and
a pulse control unit for changing the transmittance of light made incident on said liquid crystal device from a current transmittance into a target transmittance by applying drive pulses controlled with at least two-steps to said liquid crystal device.

Claim 21 (Original) A light modulation apparatus according to claim 20, wherein a pulse height of each drive pulse is controlled with at least two-steps.

Claim 22 (Original) A light modulation apparatus according to claim 20, wherein a pulse width of each drive pulse is controlled with at least two-steps.

Claim 23 (Original) A light modulation apparatus according to claim 20, further comprising a drive circuit unit, wherein the drive pulse is generated in synchronization with a clock generated by said drive circuit unit.

Claim 24 (Original) A light modulation apparatus according to claim 23, further comprising a control circuit unit, wherein luminance information of the light emerged from said liquid crystal device is fed back to said control circuit unit, and the drive pulse is generated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

Claim 25 (Original) A light modulation apparatus according to claim 20, wherein said liquid crystal device is a guest-host type liquid crystal device.

Claim 26 (Original) A light modulation apparatus according to claim 25, wherein a host material of said liquid crystal device is a negative or positive type liquid crystal having a negative or positive type dielectric constant anisotropy.

Claim 27 (Original) A light modulation apparatus according to claim 25, wherein a guest material of said liquid crystal device is a positive or negative type dichroic dye molecular material having a positive or negative type light absorption anisotropy.

Claim 28 (Original) A light modulation apparatus according to claim 20, further comprising a polarizing plate disposed in an optical path of light made incident on said liquid crystal device.

Claim 29 (Original) A light modulation apparatus according to claim 28, wherein said polarizing plate is movable in or from the optical path.

Claim 30 (Original) A light modulation apparatus according to claim 29, wherein said polarizing plate is disposed in a movable portion of a mechanical iris in such a manner as to be movable in or from the optical path by operation of said movable portion of said mechanical iris.

Claim 31 (Original) A light modulation apparatus according to claim 20, wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion.

Claims 32-41 (Canceled)

Claim 42 (Original) A light modulation apparatus according to claim 31, wherein said polarizing plate is disposed in a movable portion of a mechanical iris in such a manner as to be movable in or from the optical path by operation of said movable portion of said mechanical iris.

Claims 43-48 (Canceled)

Claim 49 (Original) An image pickup apparatus comprising:
a light modulation apparatus including a liquid crystal device, and a pulse control unit for changing the transmittance of light made incident on said liquid crystal device from a current transmittance into a target transmittance by applying drive pulses controlled with at least two-steps to said liquid crystal device;

wherein said light modulation apparatus is disposed in an optical path of an optical system of said image pickup apparatus.

Claim 50 (Original) An image pickup apparatus according to claim 49, wherein a pulse height of each drive pulse is controlled with at least two-steps.

Claim 51 (Original) An image pickup apparatus according to claim 49, wherein a pulse width of each drive pulse is controlled with at least two-steps.

Claim 52 (Original) An image pickup apparatus according to claim 49, further comprising a drive circuit unit, wherein the drive pulse is generated in synchronization with a clock generated by said drive circuit unit.

Claim 53 (Original) An image pickup apparatus according to claim 52, wherein said drive circuit unit is a drive circuit unit of an image pickup device disposed on a light outgoing side of said light modulation apparatus, and luminance information of the light emerged from said liquid crystal device is fed back to said control circuit unit, and the drive pulse is generated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

Claim 54 (Original) An image pickup apparatus according to claim 49, wherein said liquid crystal device is a guest-host type liquid crystal device.

Claim 55 (Original) An image pickup apparatus according to claim 54, wherein a host material of said liquid crystal device is a negative or positive type liquid crystal having a negative or positive type dielectric constant anisotropy.

Claim 56 (Original) An image pickup apparatus according to claim 54, wherein a guest material of said liquid crystal device is a positive or negative type dichroic dye molecular material having a positive or negative type light absorption anisotropy.

Claim 57 (Original) An image pickup apparatus according to claim 49, further comprising a polarizing plate disposed in an optical path of light made incident on said liquid crystal device.

Claim 58 (Original) An image pickup apparatus according to claim 57, wherein said polarizing plate is movable in or from the optical path.

Claim 59 (Original) An image pickup apparatus according to claim 58, wherein said polarizing plate is disposed in a movable portion of a mechanical iris in such a manner as to be movable in or from the optical path by operation of said movable portion of said mechanical iris.

Claim 60 (Original) An image pickup apparatus according to claim 49, wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion.

Claims 61-86 (Canceled)

Claim 87 (Original) A method of driving a light modulation apparatus including a liquid crystal device, comprising the step of:

changing the transmittance of light made incident on said liquid crystal device from a current transmittance into a target transmittance by applying drive pulses controlled with at least two-steps to said liquid crystal device.

Claim 88 (Original) A method of driving a light modulation apparatus according to claim 87, wherein a pulse height of each drive pulse is controlled with at least two-steps.

Claim 89 (Original) A method of driving a light modulation apparatus according to claim 87, wherein a pulse width of each drive pulse is controlled with at least two-steps.

Claim 90 (Original) A method of driving a light modulation apparatus according to claim 87, wherein the drive pulse is generated in synchronization with a clock generated by a drive circuit unit provided in said light modulation apparatus.

Claim 91 (Original) A method of driving a light modulation apparatus according to claim 90, wherein luminance information of the light emerged from said liquid crystal device is fed back to a control circuit unit provided in said light modulation apparatus, and the drive pulse is generated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

Claim 92 (Original) A method of driving a light modulation apparatus according to claim 87, wherein said liquid crystal device is a guest-host type liquid crystal device.

Claim 93 (Original) A method of driving a light modulation apparatus according to claim 92, wherein a host material of said liquid crystal device is a negative or positive type liquid crystal having a negative or positive type dielectric constant anisotropy.

Claim 94 (Original) A method of driving a light modulation apparatus according to claim 92, wherein a guest material of said liquid crystal device is a positive or negative type dichroic dye molecular material having a positive or negative type light absorption anisotropy.

Claim 95 (Original) A method of driving a light modulation apparatus according to claim 87, wherein a polarizing plate is disposed in an optical path of light made incident on said liquid crystal device.

Claim 96 (Original) A method of driving a light modulation apparatus according to claim 95, wherein said polarizing plate is movable in or from the optical path.

Claim 97 (Original) A method of driving a light modulation apparatus according to claim 96, wherein said polarizing plate is disposed in a movable portion of a mechanical iris in such a manner as to be movable in or from the optical path by operation of said movable portion of said mechanical iris.

Claim 98 (Original) A method of driving a light modulation apparatus according to claim 87, wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion.

Claims 99-124 (Canceled)

Claim 125 (Original) A method of driving an image pickup apparatus in which a liquid crystal device is disposed in an optical path of an optical system of said image pickup apparatus, comprising the step of:

changing the transmittance of light made incident on said liquid crystal device from a current transmittance into a target transmittance by applying drive pulses controlled with at least two-steps to said liquid crystal device.

Claim 126 (Original) A method of driving an image pickup apparatus according to claim 125, wherein a pulse height of each drive pulse is controlled with at least two-steps.

Claim 127 (Original) A method of driving an image pickup apparatus according to claim 125, wherein a pulse width of each drive pulse is controlled with at least two-steps.

Claim 128 (Original) A method of driving an image pickup apparatus according to claim 125, wherein the drive pulse is generated in synchronization with a clock generated by a drive circuit unit provided in said light modulation apparatus.

Claim 129 (Original) A method of driving an image pickup apparatus according to claim 125, wherein a drive circuit unit of an image pickup device is disposed on a light outgoing side of said light modulation apparatus; and luminance information of the light emerged from said liquid crystal device is fed back to a control circuit unit provided in said light modulation apparatus, and the drive pulse is generated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

Claim 130 (Original) A method of driving an image pickup apparatus according to claim 125, wherein said liquid crystal device is a guest-host type liquid crystal device.

Claim 131 (Original) A method of driving an image pickup apparatus according to claim 130, wherein a host material of said liquid crystal device is a negative or positive type liquid crystal having a negative or positive type dielectric constant anisotropy.

Claim 132 (Original) A method of driving an image pickup apparatus according to claim 130, wherein a guest material of said liquid crystal device is a positive or negative type dichroic dye molecular material having a positive or negative type light absorption anisotropy.

Claim 133 (Original) A method of driving an image pickup apparatus according to claim 125, wherein a polarizing plate is disposed in an optical path of light made incident on said liquid crystal device.

Claim 134 (Original) A method of driving an image pickup apparatus according to claim 133, wherein said polarizing plate is movable in or from the optical path.

Claim 135 (Original) A method of driving an image pickup apparatus according to claim 134, wherein said polarizing plate is disposed in a movable portion of a mechanical iris in such a manner as to be movable in or from the optical path by operation of said movable portion of said mechanical iris.

Claim 136 (Original) A method of driving an image pickup apparatus according to claim 125, wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion.

Claims 137-162 (Canceled)